

Notic of Allowability

Applicati n N .

09/935,334

Examiner

Stephen J Stein

Applicant(s)

SATO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-4,8-13,15 and 26.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) f ach sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachm nt(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 11/5/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20041217.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

STEPHEN STEIN
PRIMARY EXAMINER

Stephen Stein

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andrew L. Tiajolloff on December 17, 2004.

The application has been amended as follows:

IN THE CLAIMS

4. (Twice Amended) An article as claimed in Claim 1, wherein the metallic element containing surface layer further comprises a second element selected from the group consisting of Sm, Eu, Yb, Pm, Pr, Nd, Ce, Tb, Gd, Ba Mg, Y, Tm, Dy, Ho, Er, Cd, Co, Cr, Cs, Zr, Al, In, Cu, Fe, Bi, Ga and Ti.

Cancel claim 5.

8. (Once Amended) An article as claimed in claim 1 6, wherein the metallic element is additionally applied to a surface thereof.

Allowable Subject Matter

2. Claims 1-4, 8-13, 15 and 26 are allowed over the prior art of record.

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance: The primary reasons for allowance, are applicants' filing of a preliminary amendment in which dependent claims 6 and 7 were incorporated into base article claim 1 to add the limitations that the quartz body comprising the bubbles and crystalline phase additionally contains a metallic element containing layer with thickness of at least 5mm and 0.1 to 20% by weight of metallic element selected from Sm, Y, Zr, and Ti, and in addition applicants agreement to an examiner's amendment canceling dependent claim 5 and amending dependent claims 4 and 8 in order to correct some indefiniteness in the claims. (See attached Examiner's Amendment and Interview Summary form).

None of the prior art of record teaches or suggests an article comprising a body made of quartz glass having improved corrosion resistance against plasma, the quartz glass containing bubbles and crystalline phase at a 2 in a projection area per 100 cm³ of the quantity accounting for less than 100 mm quartz glass body and said quartz glass body having a metallic element containing surface layer having a thickness of at least 5 mm containing 0.1 to 20 % by weight of a metallic element, wherein the metallic element is selected from the group consisting of Sm, Y, Zr, and Ti.

While certain prior art of record, such as JP 03199133, teaches improving heat resistance of quartz glass material by adding a specified concentration of an Al, Ti, or Zr component, the prior art reference does not teach or suggest forming at least 5mm layer on of the material on the surface of the quartz in conjunction with the formation of bubbles in the quartz. Other prior art

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of record, such as US 3,894,164 (Dismukes et al.), teaches a the formation of a 1.5 micron thick film of europium-activated yttrium vanadate (Y,Eu)VO₄ or europium-activated yttrium oxysulfide (Y,Eu)₂ O₂ on a glass quartz substrate. The reference fails to teach or suggest the claimed minimum 5mm thickness of the film and further fails to teach bubbles or formation of bubbles present in the quartz glass substrate.

The prior art of record taken as whole fails to teach or suggest the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

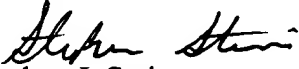
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 572-272-1544. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 571-272-1535. The official fax number is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 17, 2004



Stephen J. Stein
Primary Examiner
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